



Massachusetts Department of Environmental Protection Source Water Assessment and Protection (SWAP) Report for Granby Housing Authority

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- Inventory land uses within the recharge areas of all public water supply sources;
- Assess the susceptibility of drinking water sources to contamination from these land uses; and
- Publicize the results to provide support for improved protection.

SWAP and Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

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Table 1: Public Water System (PWS) Information

<i>PWS Name</i>	Granby Housing Authority
<i>PWS Address</i>	West State Street
<i>City/Town</i>	Granby, Massachusetts
<i>PWS ID Number</i>	1111002
<i>Local Contact</i>	Mr. John Sullivan
<i>Phone Number</i>	413-467-9300

<i>Well Name</i>	<i>Source ID#</i>	<i>Zone I (in feet)</i>	<i>IWPA (in feet)</i>	<i>Source Susceptibility</i>
Well #1	1111002-01G	246	609	Moderate

Introduction

We are all concerned about the quality of the water we drink. Drinking water sources may be threatened by many potential contaminant sources, including septic systems, road deicing, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

Description of the Water System

The Granby Housing Authority is comprised of 4 buildings each with 14, 1-bedroom apartment units and an administration building. The facility is located in the central section of Granby on Phins Hill Road. The total population is approximately 60 people. The facility is served by a single potable supply well, Well #1 and wastewater from the facility is discharged to a municipal sewer connected to South Hadley.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.
- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

Well #1 is a 280-foot deep bedrock well. The well is located in a vault behind the facility. Geologic mapping in the area indicates thin overburden deposits with the bedrock in the area mapped as Jurassic aged sedimentary rocks of the Portland Formation.

The Zone I is the area immediately around the wellhead where only activities associated with supplying water or non-threatening activities are allowed to occur. The Interim Wellhead Protection Area (IWPA) is a larger area that potentially contributes water to the well. The IWPA is only an interim protection area until an actual Zone II contribution area is delineated; the actual area of contribution to the wellhead may be larger or smaller than the IWPA. The Zone I and IWPA protective radii are 209 feet and 519 feet. These protective radii were calculated based on the metered water use from the two highest months of use from Well #1. Please refer to the attached map that shows the Zone I and IWPA. The Zone I area for Well #1 is not conforming to current DEP requirements. The Zone I area for Well #1 includes one of the buildings, parking areas, and the maintenance garage. The IWPA includes the remainder of the facility, parking, West State Street and a farm supply store southeast of Route 202. The maintenance garage has a floor drain that is believed to have an oil-water separator and to be connected to the sewer. Lawn and maintenance equipment is stored in the facility including paints, thinners and petroleum products.

There is no evidence of a continuous, protective confining clay layer in the vicinity of the wells. Wells drilled in these conditions are considered highly vulnerable to potential contamination from activities on the ground surface because there is no significant hydrogeologic barrier, such as clay, to prevent surface contamination from migrating into the aquifer. The water is not treated prior to distribution. You may request additional information regarding the quality of the water, from the local contact listed in Table 1.

Table 2: Table of Activities within the Water Supply Protection Areas

Potential Sources of Contaminants	Zone I	IWPA	Threat	Comments
Lawn	Yes	Yes	Low	Continue prohibiting the use of pesticides/fertilizers on lawns at the facility.
High density residential housing	Yes	Yes	Moderate	Septic systems, household hazardous materials, home heating fuel
Transportation Corridor/parking	Yes	Yes	Moderate	Route 202 and internal road and parking
Hazardous materials – Fertilizers & pesticides at the store	No	Yes	Moderate/High	Maintenance of hazardous materials – store materials in containment. Farm store partially within IWPA.
Transformers	No	Yes	Low	Monitor transformers for potential leaks

-For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400-foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

Please refer to the following section, attached maps of the Zone I and IWPA and Table 2 for additional assessment information.

2. Discussion of Land Uses in the Protection Areas

During the assessment, several land uses and activities were identified within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Non-conforming Zone I;**
2. **Residential facilities;**
3. **Transportation corridors and parking; and**
4. **Hazardous materials.**

There are several activities within the Zone I and IWPA that pose a significant threat to the water supply. The overall ranking of susceptibility to contamination for the well is moderate based on at least one moderate threat activity within the protection areas. Please refer to Table 2. Although the farm store does have pesticides and fertilizers, they are stored for sale and not application on site.

1. Non-conforming Zone I – Although the water supplier owns and controls the entire Zone I area, there are non-conforming activities within the Zone I. Systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Zone I Recommendations:

- ✓ Prohibit any additional activities within Zone I and where feasible remove non-conforming activities within the Zone I areas.
- ✓ Use Best Management Practices for handling treatment chemicals and vehicles used to access the area.
- ✓ Monitor all deliveries, especially petroleum products and hazardous materials and parking areas.
- ✓ Continue to prohibit the use of pesticides, fertilizers or road salt within Zone I.

2. Residential Land Uses – The residences have on-site septic systems. If managed improperly, activities associated with residential areas can contribute to drinking water contamination. Common potential sources of contamination include:

- **Household Hazardous Materials** - Hazardous materials may include automotive wastes, paints, solvents, pesticides, fertilizers, and other substances. Improper use, storage, and disposal of chemical products used in homes are potential sources of contamination.
- **Heating Oil/Kerosene Storage** - Although Granby Housing Authority heats by electricity, the other private residences within the northern portion of the IWPA may heat with fuel oil or diesel fuel. If managed improperly, Underground and Aboveground Storage Tanks (USTs and ASTs) can be potential sources of contamination due to leaks or spills of the fuel oil/kerosene they store.
- **Stormwater** – Catch basins transport stormwater from roadways and adjacent properties to the ground. As flowing stormwater travels, it picks up debris and contaminants from streets and lawns. Common potential contaminants include lawn chemicals, pet waste, and

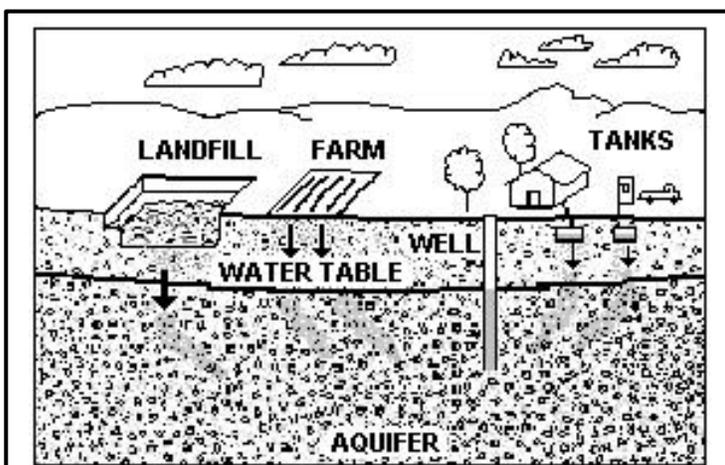


Figure 1: Example of how a well could become contaminated by different land uses and activities.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

For More Information:

Contact Catherine V. Skiba in DEP's Springfield Regional Office at (413) 755-2119 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on the Drinking Water Program web site at:

www.state.ma.us/dep/brp/dws/

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws/ including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix

Copies of this assessment have been provided to the public water supplier, town boards, the town library and the local media.

contaminants from automotive leaks, maintenance, washing, or accidents.

Residential Land Use Recommendations:

- ✓ Educate residents on best management practices (BMPs) for protecting water supplies. Distribute the fact sheet "Residents Protect Drinking Water" available in Appendix A and on www.mass.gov/dep/brp/dws/protect.htm, which provides BMPs for common residential issues.
- ✓ Promote BMPs for stormwater management and pollution controls.

3. Transportation corridor and parking – Route 202 is located within the IWPA along with the access and parking areas for the facility. Accidents and normal use and maintenance of roads pose a potential threat to water quality. Catch basins transport stormwater from roadways and adjacent properties to the ground, streams, rivers or reservoir. As flowing stormwater travels, it picks up de-icing materials, petroleum chemicals and other debris on roads and contaminants from streets and lawns. Common potential contaminants in stormwater originate from automotive leaks, automobile maintenance and car washing, accidental spills as well as waste from wildlife and pets.

Recommendations:

- ✓ Prepare an Emergency Response Plan that includes coordination between the emergency responders to be sure they are aware of the location of your well.
- ✓ Monitor the sodium levels in the water.

4. Hazardous Materials Storage and Use – The facility utilizes hazardous materials for maintenance. Hazardous materials such as paint, thinners, petroleum products, etc. should be kept in containment and used with caution. Cleaning and disposal should not be through the septic system. Spill kits and signs designating areas of storage should be available. If hazardous materials are improperly stored, used, or disposed, they become potential sources of contamination. Hazardous materials should never be allowed to enter a catch basin, or floor drain leading directly to the ground.

Hazardous Materials Storage and Use Recommendations:

- ✓ Review current management of hazardous materials on site and consider relocation of the well to minimize any potential threat from an accidental release at the site.
- ✓ Use BMPs for fuel oil storage, hazardous material handling, storage, disposal, and emergency response planning.

3. Protection Recommendations

Implementing protection measures and best management practices (BMPs) will further reduce the well's susceptibility to contamination. The DEP commends the effort shown in current protection practices of not using pesticides and fertilizers in the Zone I.

Please review and adopt the key recommendations listed above and as follows:

Priority Recommendations:

- ✓ Consider modifying the access to the pit for safer access.

Zone I and IWPA:

- ✓ Prohibit any new non-water supply activities from Zone I.
- ✓ Conduct regular inspections of the Zone I and IWPA.
- ✓ Monitor activities and if there is evidence of increased activity or access, consider relocating the wells.
- ✓ Post drinking water supply signs in key location such as along the access road and in the parking areas but away from the well.
- ✓ Use Best Management Practices (BMPs) for the use of petroleum products, lawn care products, pesticides and household hazardous waste.

Training and Facilities Management:

- V Staff should be instructed on the proper disposal of spent chemicals. Include custodial staff, groundskeepers, and certified operator.

Planning:

- V Work with local officials to develop an Aquifer Protection District Bylaw that includes the well's IWPA and to assist you in continued protection of the water supply.
- V Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- V Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts.
- V Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

Funding:

The Department's Wellhead Grant Protection Program provides funds to assist public water suppliers in addressing Wellhead protection through local projects. Protection recommendations discussed in this document may be eligible for funding under the "Wellhead Protection Grant Program". If funds are available, the Department posts a new Request for Response (RFR), grant application form. Other funding opportunities are described in "Grant and Loan Programs: Opportunities for Watershed Protection, Planning and Implementation" on the MA DEP website at <http://www.state.ma.us/dep/brp/mf/files/glprgm.pdf>.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to encourage discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area
- Recommended Source Protection Measures Fact Sheet